

**Notice of Allowability**

Application No.

09/681,534

Applicant(s)

FUNAKOSHI ET AL.

Examiner

Art Unit

Leonid Shapiro

2673

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendmend, filed on 09/09/04.
2. ☒ The allowed claim(s) is/are 1-3, 5-6, 8-10, 12-14, 16, renumbered as 1-12.
3. ☒ The drawings filed on 24 April 2001 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |  |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)  | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment                               |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material          | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance   |
|   | 9. <input type="checkbox"/> Other _____.   |

***Allowable Subject Matter***

1. Claims 1-3, 5-6, 8-10, 12-14, 16 are allowed.
2. The following is an examiner's statement of reasons for allowance:

Relative to independent claims 1, 8, the major difference between the teaching of the prior art of record (Tjandrasuwita , Kim and Asprey) and the instant invention is that the said prior art **does not teach** a liquid crystal display apparatus with a pseudo-gray-level-expansion portion for applying pseudo gray level expansion to sub-pixel data calculated by gray level adjustment portion, wherein pseudo-gray-level-expansion portion converts sub-pixel data which is converted by gray level adjustment portion and has a larger number of bits than number of bits of liquid crystal driver into data which has number of bits of liquid crystal driver and is equivalent to data having larger number of bits.

Relative to independent claim 5 the major difference between the teaching of the prior art of record (Tjandrasuwita and Asprey) and the instant invention is that the said prior art **does not teach** a monochrome liquid crystal display apparatus wherein controller assumes a characteristic for the particular sub-pixel in which no multiple of the brightness level of any intermediate gray level is identical to the brightness level of any intermediate gray level of another sub-pixel and selecting a gray level which provides desired brightness from within characteristic, and wherein controller outputs a gray level by using a given gamma characteristic for a particular sub-pixel of plurality of sub-pixels and outputs a gray level based on a different gamma characteristic for other sub-pixels.

Relative to independent claims 9, 12-13, the major difference between the teaching of the prior art of record (Tjandrasuwita , Larkin and Asprey) and the instant invention is that the said prior art **does not teach** an image conversion method wherein replacing replaces sub-pixel data with an appropriate gray level by using a gray level filling the space between gray levels of basic gamma characteristic set based on number of bits.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

#### ***Telephone inquire***

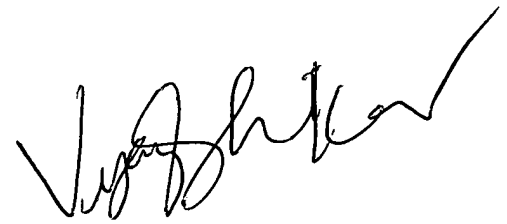
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonid Shapiro whose telephone number is 703-305-5661. The examiner can normally be reached on 8 a.m. to 5 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on 703-305-4938. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ls

01.03.05

A handwritten signature in black ink, appearing to read 'Vijay Shankar', with a long horizontal stroke extending to the right.

**VIJAY SHANKAR**  
**PRIMARY EXAMINER**